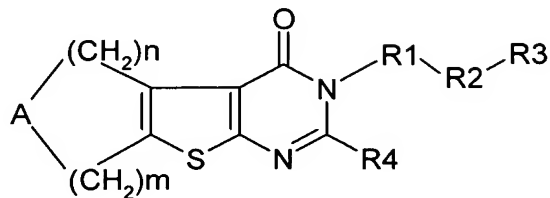


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JC17 Rec'd PCT/PTO 17 JUN 2005

We claim:

1. (Original) A compound of the formula (I)



in which

A is O, S, SO, NR₅ or CH₂;

R₅ is H, C₁₋₅-alkyl, aryl, aralkyl, acyl or alkoxy carbonyl;

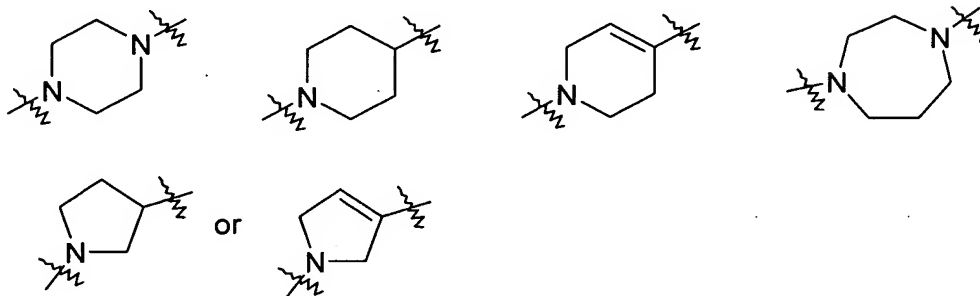
R₄ is H or methyl;

n is 1 or 2;

m is 1 or 2;

R₁ is C₁₋₈-alkylene;

R₂ is a group of the formula



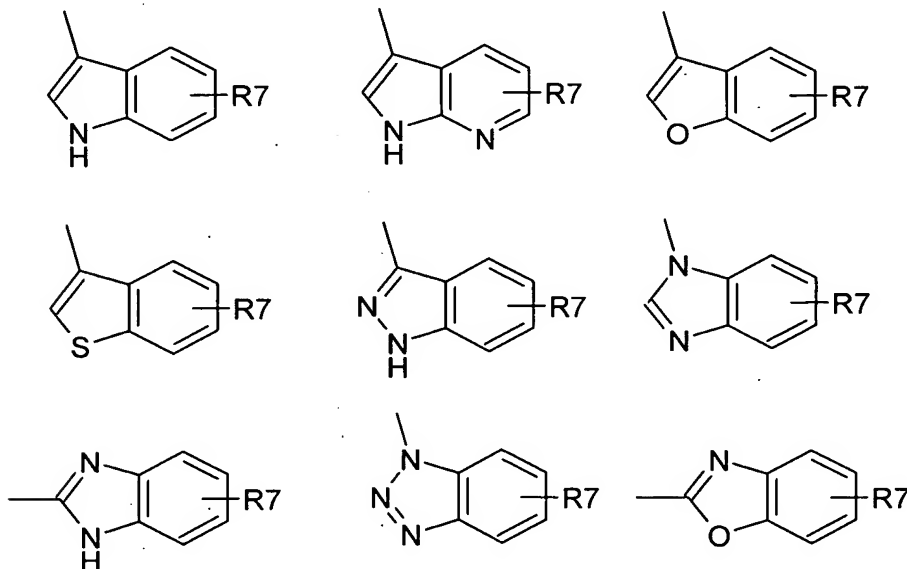
R₃ is 5-membered heteroaryl which may be fused to an aryl or heteroaryl radical, where the heteroaryl and, optionally, the fused aryl or heteroaryl radical may have 1, 2 or 3 substituents selected independently of one another from C₁₋₅-alkyl, C₁₋₅-alkoxy, C₁₋₅-alkylthio, halogen, CN, halo-C₁₋₅-alkyl, halo-C₁₋₅-

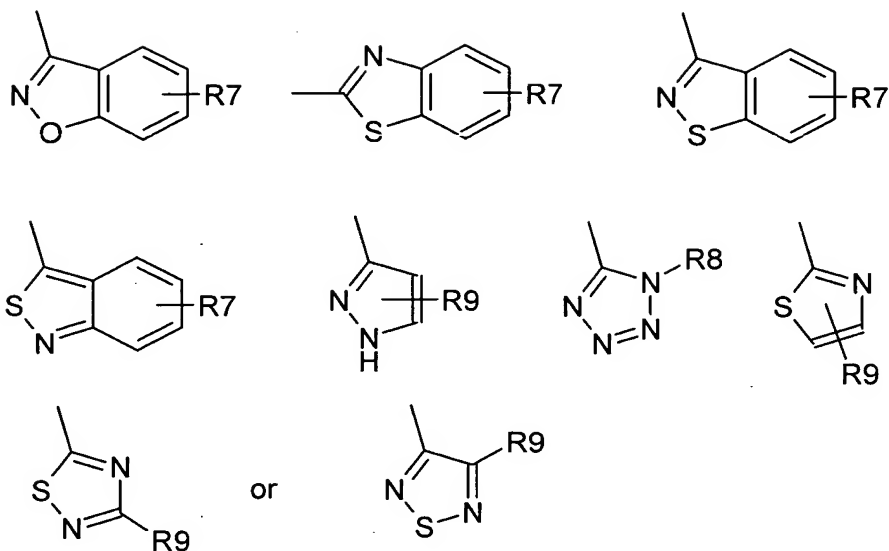
alkoxy, hydroxy, $-NH_2$, $-N(R6)_2$, $-NH(R6)$, aryl, aryloxy, aralkyl, aralkyloxy and heteroaryl, where the substituents aryl, aryloxy, aralkyl, aralkyloxy and heteroaryl may have 1, 2 or 3 substituents selected independently of one another from C_{1-5} -alkyl, C_{1-5} -alkoxy, C_{1-5} -alkylthio, halogen, CN, halo- C_{1-5} -alkyl, halo- C_{1-5} -alkoxy, hydroxy, $-NH_2$, $-N(R6)_2$ and $-NH(R6)$; and the radicals

R6 are independently of one another C_{1-5} -alkyl,

and physiologically tolerated salts thereof.

2. (Original) The compound according to claim 1, wherein R3 is 1H-indol-3-yl, 1H-pyrrolo[2,3-b]pyridin-3-yl, 1-benzofuran-3-yl, 1-benzothien-3-yl, 1H-indazol-3-yl, 1H-benzimidazol-1-yl, 1H-benzimidazol-2-yl, 1H-benzotriazol-1-yl, 1,3-benzoxazol-2-yl, 1,2-benzisoxazol-3-yl, 1,3-benzothiazol-2-yl, 1,2-benzisothiazol-3-yl, pyrazol-3-yl, 1H-tetrazol-5-yl, 1,3-thiazol-2-yl or 1,2,4-thiadiazol-5-yl, which may have 1, 2 or 3 substituents selected independently of one another from C_{1-5} -alkyl, C_{1-5} -alkoxy, halogen, CN, SCH_3 , trifluoromethyl, hydroxy, $-N(C_{1-5}\text{-alkyl})_2$, $-NH(C_{1-5}\text{-alkyl})$, $-NH_2$, aryl, aryloxy, aralkyl, aralkyloxy and heteroaryl, where the substituents aryl, aryloxy, aralkyl, aralkyloxy and heteroaryl may have 1, 2 or 3 substituents selected independently of one another from C_{1-5} -alkyl, C_{1-5} -alkoxy, halogen, CN, SCH_3 , trifluoromethyl, hydroxy, $-N(C_{1-5}\text{-alkyl})_2$, $-NH(C_{1-5}\text{-alkyl})$ or $-NH_2$.
3. (Currently Amended) The compound according to claim 2, wherein R3 is a radical of the formula





in which

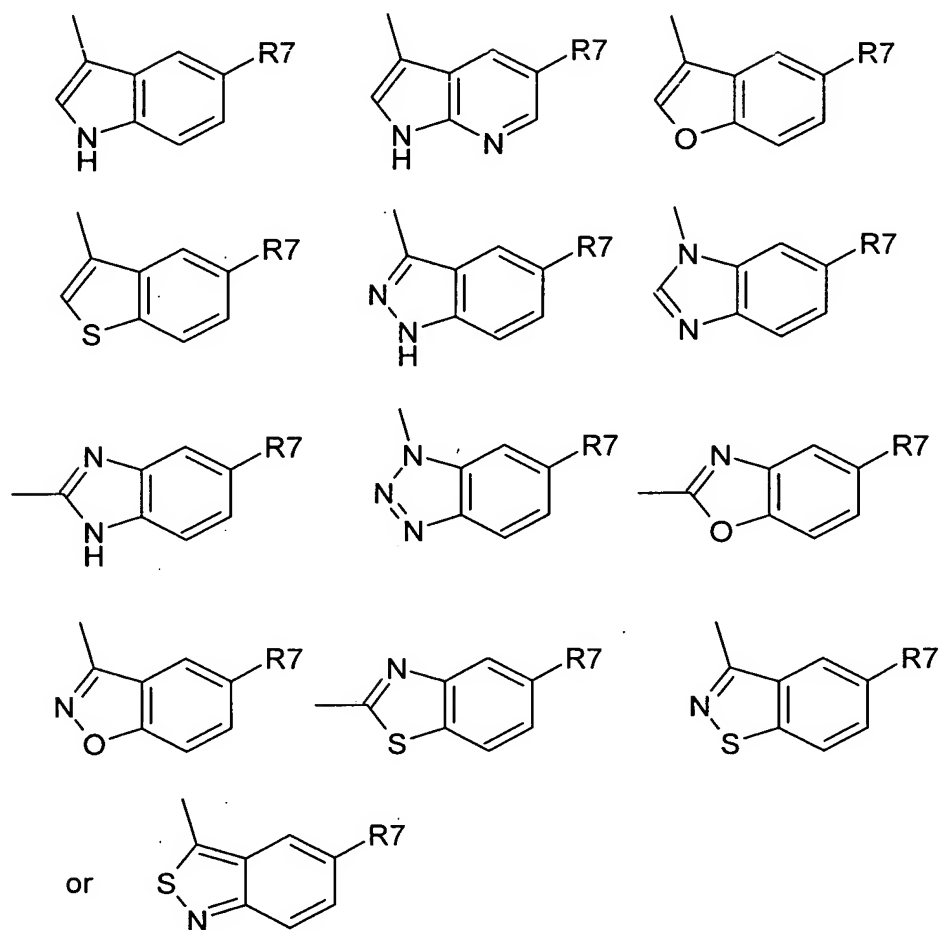
R7 is H, C₁₋₅-alkyl, C₁₋₅-alkoxy, C₁₋₅-alkylthio, halogen, CN, halo-C₁₋₅-alkyl, halo-C₁₋₅-alkoxy, hydroxy, -NH₂, -N(R6)₂ or -NH(R6); and

R8 is H, C₁₋₅-alkyl, aryl, aralkyl and or heteroaryl;

R9 is H, C₁₋₅-alkyl, C₁₋₅-alkoxy, C₁₋₅-alkylthio, halogen, CN, halo-C₁₋₅-alkyl, halo-C₁₋₅-alkoxy, hydroxy, -NH₂, -N(R6)₂, -NH(R6), aryl, aryloxy, aralkyl, aralkyloxy or heteroaryl, where aryl, aryloxy, aralkyl, aralkyloxy or heteroaryl may have 1, 2 or 3 substituents selected independently of one another from C₁₋₅-alkyl, C₁₋₅-alkoxy, C₁₋₅-alkylthio, halogen, CN, halo-C₁₋₅-alkyl, halo-C₁₋₅-alkoxy, hydroxy, -NH₂, -N(R6)₂ and -NH(R6); and the radicals

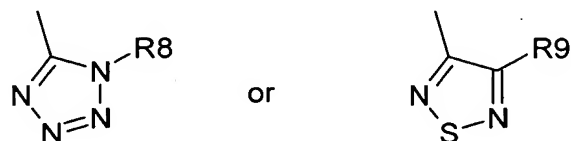
R6 have the meaning indicated in claim 1.

4. (Original) The compound according to claim 3, wherein R3 is a radical of the formula



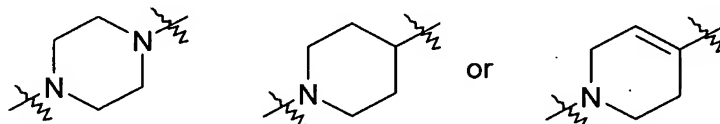
in which R7 is as defined in claim 3.

5. (Original) The compound according to claim 3, wherein R3 is a radical of the formula

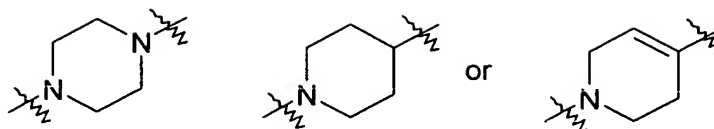


where R8 and R9 are as defined in claim 3.

6. (Original) The compound according to claim 4, wherein R7 is H, C₁₋₅-alkyl, preferably methyl, halogen, preferably chlorine, or halo-C₁₋₅-alkyl, preferably trifluoromethyl.
7. (Original) The compound according to claim 5, wherein R8 is C₁₋₅-alkyl, preferably methyl, ethyl or isopropyl or aryl, preferably phenyl.
8. (Original) The compound according to claim 5, wherein R9 is C₁₋₅-alkoxy, preferably methoxy, ethoxy or isopropoxy, aryl, preferably phenyl which may be substituted, e.g. by chlorine, or heteroaryl, e.g. 2-thienyl.
9. (Original) The compound according to claim 1, wherein A is O, S or NR₅, where R₅ is as defined in claim 1 and is preferably H or methyl.
10. (Original) The compound according to claim 1, wherein R4 is hydrogen.
11. (Original) The compound according to claim 1, wherein n is 2 and m is 1 or n is 1 and m is 2.
12. (Original) The compound according to claim 1, wherein R1 is eth-1,2-ylene, prop-1,3-ylene, prop-1,2-ylene, 2-methyl-prop-1,3-ylene, but-1,2-ylene or but-1,3-ylene.
13. (Original) The compound according to claim 1, wherein R2 is a group of the formula



14. (Original) The compound according to claim 1, wherein
 - R4 is hydrogen;
 - n, m are 2, 1 or 1, 2;
 - R1 is eth-1,2-ylene, prop-1,3-ylene, prop-1,2-ylene, 2-methylprop-1,3-ylene, but-1,2-ylene or but-1,3-ylene;
 - R2 is a group of the formula

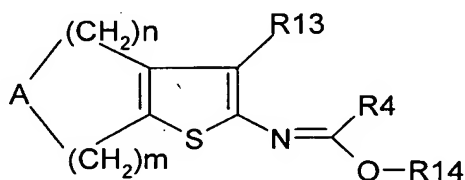


and

R3 is as defined in claim 1;

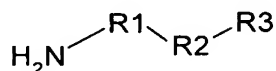
15. (Original) The compound according to claim 14, namely
 3-substituted 5,6,7,8-tetrahydropyrido[4',3':4,5]thieno[2,3-d]pyrimidin-4(3H)-one
 derivatives;
 3-substituted 3,5,6,8-tetrahydro-4H-pyrano[4',3':4,5]thieno[2,3-d]pyrimidin-4-one
 derivatives, or
 3-substituted 3,5,6,8-tetrahydro-4H-thiopyrano[4',3':4,5]thieno[2,3-d]pyrimidin-4-one
 derivatives.
16. (Original) A process for preparing a compound according to claim 1

a) by reacting a compound of the formula (II)



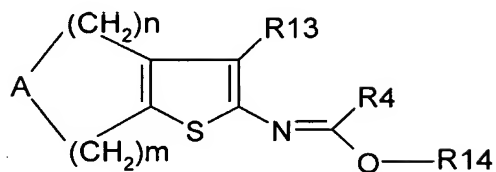
in which A, n, m and R4 have one of the meanings indicated in claim 1; R13 is CN or C₁₋₃-alkyl-O-CO-, and R14 is C₁₋₃-alkyl,

with a primary amine of the formula (III)



in which R1, R2 and R3 have one of the meanings indicated in claim 1, and isolating and, optionally, converting the resulting compound into a physiologically tolerated salt thereof, or

b1) by reacting a compound of the formula (II)



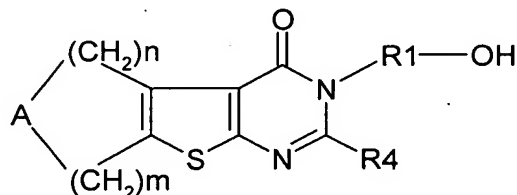
in which A, n, m and R4 have one of the meanings indicated in claim 1; R13 is CN or C₁₋₃-alkyl-O-CO-, and R14 is C₁₋₃-alkyl,

with a primary amine of the formula (IV)



in which R1 has one of the meanings indicated in claim 1;

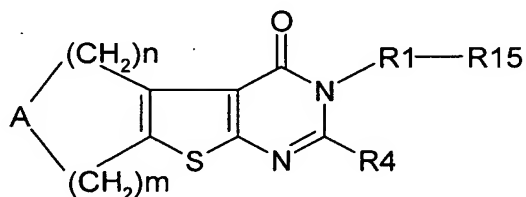
b2) reacting the resulting compound of the formula (V)



in which A, n, m, R4 and R1 have one of the meanings indicated in claim 1,

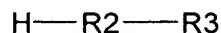
with a halogenating agent such as thionyl chloride; and

b3) reacting the resulting compound of the formula (VI)



in which A, n, m, R4 and R1 have one of the meanings indicated in claim 1, and R15 is halogen,

with a secondary amine of the formula (VII)



in which R2 and R3 have one of the meanings indicated in claim 1,

and isolating and, optionally, converting the resulting compound into a physiologically tolerated salt thereof.

17. (Original) The compound according to claim 1 for therapeutic use.
18. (Original) A pharmaceutical composition comprising at least one compound according to claim 1 and physiologically acceptable aids.
19. (Currently Amended) A method ~~The use of a compound according to any of claims 1 to 15 for producing a composition~~ for the treatment of disorders of the central nervous system, which comprises administering a compound according to claim 1 to an individual in need thereof.
20. (Currently Amended) The ~~use~~ method according to claim 19, wherein the disorder of the central nervous system is a neuropsychiatric disorder, in particular a depression.